

Notice of Allowability

Application No.

09/884,374

Examiner

Qing-Yuan Wu

Applicant(s)

HSIEH, BOR-MING

Art Unit

2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/28/05.
 2. ☒ The allowed claim(s) is/are 1-7, 9, 11-18, 20-23, 39-44, 46 and 48-49 renumbered as 1-29.
 3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 12/15/05.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for the examiner's amendment was given in a telephone interview with Mr. Brian G. Hart, reg. No. 44,421 on December 15, 2005 to cancel claims 24-37 and to amend claims 1, 13 and 39 as follow.

In the claims:

I. In claim 1;

(i) line 3, replace "a sleep queue" with --the multi-dimensional sleep queue--

(ii) line 11, replace "ore" with --or--

II. In claim 13;

(i) line 4, replace "a sleep queue" with --the multi-dimensional sleep queue--

(ii) line 12, replace "ore" with --or--

III. In claim 39;

(i) line 8, replace "a sleep queue" with --the multi-dimensional sleep queue--

(ii) line 16, replace "ore" with --or--

Reasons for Allowance

3. The following is an Examiner's Statement of Reasons for Allowance:

The prior art of record does not expressly teach or render obvious, in the context of the claims taken as a whole as recited in independent claims 1, 13 and 39.

A multi-dimensional execution queue was uncovered in U.S. Patent 6,609,161 (Young) and sleep queue prioritized based on wakeup time and priority was uncovered in Applicant Admitted Prior Art. The references taken alone or in combination does not expressly teach or render obvious, in the context of the claims taken as a whole, as recited in independent claims 1, 13, and 39 in responsive to identifying a thread of execution to insert into a sleep queue for a predetermined amount of time, inserting the thread of execution into a first dimension of the multi-dimensional sleep queue if there is not a thread with a wake-up time equivalent to the predetermined amount of time in the first dimension and if there are one or more different threads of execution with the wake-up time in a second dimension of the multi-dimensional sleep queues, each of the one or more different threads of execution has a thread priority lower than or equal to a thread priority associated with the thread of execution.

Though it is known to use multi-dimensional queue to dispatch processes, and queuing sleeping processes to be re-execute by a processor at a predetermined amount of time, the combined use of a multi-dimensional sleep queue was not uncovered.

Nor was a reference uncovered that would have provided a basis of evidence for asserting a motivation that one of ordinary skill level in the art at the time the invention was made, knowing a multi-dimensional queue to dispatch processes, and queuing sleeping processes would have integrated or modified to yield a multi-dimensional sleep queue to dispatch sleeping processes as recited in the context of the independent claims 1, 13 and 39.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qing-Yuan Wu whose telephone number is (571) 272-3776. The examiner can normally be reached on 8:30am-5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on (571) 272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Qing-Yuan Wu

Patent Examiner

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WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER